

THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant: Steven A. Benner

Serial No.: 09/538,338

Filing Date: March 29, 2000

Title: PRECURSORS FOR DEOXYRIBONUCLEOTIDES CONTAINING NON-STANDARD NUCLEOSIDES

Docket No.: 031403/9009

Group Art Unit: 1655

Examiner: L. Arthur

TECH CENTER 1600/2900

FEB 04 2002

RECEIVED

DECLARATION OF STEVEN A. BENNER UNDER 37 CFR § 1.132

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

I, Steven A. Benner, do hereby declare and state the following:

1. I am presently a Professor at the University of Florida. I am the sole inventor of claims 4-14 of the above-identified patent application. At the time that I made this invention, I was a Professor at the Swiss Federal Institute of Technology in Zurich, Switzerland.

2. Joseph A. Piccirilli, Tilman Krauch, Simon Moroney and I are co-authors of the article "Enzymatic Incorporation of a New Base Pair into DNA and RNA Extends the Genetic Alphabet" (Nature 343: 33-37 (1990)) ("Piccirilli *et al*").

4. The Piccirilli *et al.* article discloses the enzymatic incorporation of 2'-deoxyxanthosine phosphate into DNA, one of the particulars of claim 4, 5, and 10.

5. The Piccirilli *et al.* publication describes my own work and the work of Mr. Piccirilli, Mr. Krauch, and Mr. Moroney.

6. I am the sole inventor of claims 4-14.

7. Joseph A. Piccirilli, Tilman Krauch, and Simon Moroney, the other co-authors on the Piccirilli *et al.* publication, worked under my direction to carry out the experiments that reduced to practice the invention described in claims 4-14. They did not contribute to the concept of the claimed invention. The technical support that they provided included synthesizing certain of the

compounds described in the publication, and carrying out the enzymological work described in the publication.

8. Joseph A. Piccirilli was named as a co-author on the Piccirilli *et al.* publication because he performed some of the experimental work described in the publication. Dr. Piccirilli was then a graduate student in my laboratory, and it is customary in my field to acknowledge the contribution of graduate student's experimental work with coauthorship, even if they did not contribute to the concept of a published work.

9. Tilman Krauch was named as a co-author on the Piccirilli *et al.* publication because he performed some of the experimental work described in the publication. Dr. Krauch was then a graduate student in my laboratory, and it is customary in my field to acknowledge the contribution of graduate student's experimental work with coauthorship, even if they did not contribute to the concept behind a published work.

10. Simon E. Moroney was named as a co-author on the Piccirilli *et al.* publication because he performed some of the experimental work described in the publication. Dr. Moroney was then a postdoctoral fellow in my laboratory, and it is customary in my field to acknowledge the contribution of the experimental work of postdoctoral fellows with coauthorship, even if they did not contribute to the concept behind a published work.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under Section 101 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: December 11, 2001



Steven A. Benner

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10/04/01



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I, Steven A. Benner, do hereby declare and state the following:

1. I am presently a Professor at the University of Florida. I am the sole inventor of claims 4-14 of the above-identified patent application. At the time that I made this invention, I was a Professor at the Swiss Federal Institute of Technology in Zurich, Switzerland.
2. Chistopher Y. Switzer, Simon E. Moroney and I are co-authors of the article Enzymatic incorporation of a new base pair into DNA and RNA. *J. Am. Chem. Soc.* **111**, 8322-8323 (1989) ("Switzer *et al*").
4. The Switzer *et al.* article discloses the enzymatic incorporation of 2'-deoxy-isoguanidine monophosphate and 2'-deoxy-isocytidine monophosphate into DNA, some of the particulars of claims 4, 5, and 10.
5. The Switzer *et al.* publication describes my own work and the work of Mr. Switzer and Mr. Moroney.
6. I am the sole inventor of claims 4-14.
7. Chistopher Y. Switzer and Simon Moroney, the other co-authors on the Switzer *et al.* publication, worked under my direction to carry out the experiments that reduced to practice the invention described in claims 4-14. They did not contribute to the concept of the claimed

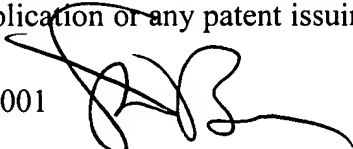
invention. The technical support that they provided included synthesizing certain of the compounds described in the publication and carrying out the enzymological work described in the publication.

8. Christopher Y. Switzer was named as a co-author on the Switzer *et al.* publication because he performed some of the experimental work described in the publication. Dr. Switzer was then a postdoctoral fellow in my laboratory, and it is customary in my field to acknowledge the contribution of the experimental work of postdoctoral fellows with coauthorship, even if they did not contribute to the concept behind a published work.

9. Simon E. Moroney was named as a co-author on the Switzer *et al.* publication because he performed some of the experimental work described in the publication. Dr. Moroney was then a postdoctoral fellow in my laboratory, and it is customary in my field to acknowledge the contribution of the experimental work of postdoctoral fellows with coauthorship, even if they did not contribute to the concept behind a published work.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements and the like so made are punishable by fine or imprisonment, or both, under Section 101 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: December 7, 2001



Steven A. Benner

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10/04/01